GUIDANCE FOR CONSULTANTS

Procedures for Completing the Natural Environmental Study and Related Biological Reports

CALTRANS

Environmental Program

Biological Studies Branch

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I. INTRODUCTION

These guidelines are for use by consultants retained by Caltrans to perform biological studies as part of the environmental process. Consultants who are preparing biological studies for local agencies or developers as part of environmental documents for Caltrans approval are also advised to use these guidelines. Consultants may be retained solely to perform specific biological studies or as part of a larger contract covering environmental document preparation or preliminary engineering studies. The consultant is referred to the contract document for the specific scope of work to be performed. These guidelines use the term "contract" to mean the scope of work to be performed by the consultant. These guidelines should be used in conjunction with Caltrans Standard Enviornmental Reference and the Federal Highway Administration Technical Advisory T6640.8A.

Purpose of Natural Environment Study and Related Reports

The purpose of the Natural Environment Study (NES) and related documents is to provide certain biological studies and information necessary for environmental documents to satisfy legal requirements of the various State and Federal statutes described in Section IX of these guidelines. Generally, the NES includes documentation of the biological resources in the project area and an assessment of the impacts of the project alternatives on those resources. The consultant may also be requested to provide recommendations on the significance of the impacts and potential mitigation measures; prepare draft or final mitigation plans; or prepare separate documents for use in gaining project approvals from external agencies.

Guideline Contents

Sections I-IX of these guidelines provide an introduction and basic background information on pertinent laws, report requirements and consultant qualifications, and a general discussion of Caltrans and consultant roles and responsibilities in the biological study process.

Section X gives a step-by-step procedural outline for preparing a Natural Environment Study and related documents. It describes the required background research, fieldwork, analysis and reports.

Following these guidelines are Appendices which include format and content requirements for various reports as well as additional information relating to the procedural steps outlined in Section X.

How to Use the Guidelines

While the information provided in Sections I-VIII applies to most contracts for biological studies, it is intended only as general guidance. Required consultant qualifications, deliverables and responsibilities may differ for specific projects, and consultants are advised to use this guidance in conjunction with the contract scope of work.

The procedural steps outlined in Section X are intended to address the full range of biological studies that might be performed by consultants, although most contracts will not require all of these steps. If the contract does not explicitly identify the required steps or level of study, the

consultant and the Contract Manager (CM) will determine which steps are appropriate for the particular project being analyzed. (Even if the contract does identify the required steps, it is recommended that the consultant and the CM confirm that the identified steps are appropriate.)

The guidelines should be used as follows:

1. The consultant and the CM should agree on applicable laws (See Section IX) that could possibly apply to the project. This will depend on resources present and sources of project funding. Certain Federal laws are not applicable if Federal funds or approvals are not required.
2. Unless otherwise specified in the Scope of Work, the consultant will perform STEP 1-Develop Preliminary Focus for Biological Studies and STEP 2-Determine Types and Level of Studies Potentially Required. The CM will review and concur in the results of these steps before the consultant proceeds to STEP 3. See Section X for details on STEPS.
3. The consultant performs STEP 3-Map Habitat Types in Project Impact Area.
4. The consultant, in consultation with the CM, determines if STEPS 4-Migrational Corridor Studies, 5-Biological Factors that Need to be Addressed, 6-Areas under Special Jurisdiction, 7-Perform Wetland Studies, and 8-Biological Assessment, are applicable to the scope of work. The consultant may need to collect a certain amount of information in order to make this determination. The consultant performs applicable STEPS.
5. The consultant performs STEP 9-Determine Impacts, STEP 10-Prepare Natural Environment Study Report, and STEP 11-Transmittal to Contract Manager.
6. During and following the circulation of the Draft Environmental Document, the consultant performs STEP 12-Respond to Comments on Draft Environmental Document.
7. If necessary, the consultant performs STEP 13-Undertake Additional Studies.

Consultant Responsibilities

The specific responsibilities of the consultant in the preparation of the NES and other biological studies are covered in the consultant's contract. The contract scope of work may be specified in detail or may be a general statement that a NES is to be prepared. Whatever the case may be, the consultant needs to have a clear understanding with the CM as to what is expected in the following areas:

1. **Scope of Work.** A preliminary scope of work is developed by Caltrans, and provided to the "short-listed" consultants for their use in preparing technical proposals and/or presentations. Following selection of the most qualified consultant, Caltrans and the consultant negotiate a more detailed work scope and schedule, as well as the price for the services. After contract execution, the consultant is responsible for carrying out the work specified in the negotiated contract, within the specified budget and time frame. Any subsequent revisions to the work scope or budget require Caltrans prior approval. In some cases, the contract will provide for further refinement of the study plan following preliminary investigations (see "Plan of Study" below). Otherwise, the consultant must notify Caltrans if a change in the work scope or level of effort appears warranted.

2. **Contacts within Caltrans.** Although the CM is the primary link between the consultant and Caltrans, it may be appropriate for the CM to authorize the consultant to directly communicate with other Caltrans staff, particularly the District and Headquarters biologists. The CM may delegate certain responsibilities directly to a technical staff member. The CM may also authorize the consultant to contact directly staff involved with other technical studies (such as traffic, noise and water quality) or project development engineers. These direct contacts are usually restricted to information gathering purposes.

3. **Contacts with Other Agencies.** The consultant may be involved in two kinds of contact with other agencies (State or Federal): informal and formal. Informal contacts to obtain background information on the project study area may be made without prior approval of the CM. However, the consultant is required to keep records of all informal agency contacts and to submit copies of those records with the regular progress reports. Formal contacts with other agencies for the purposes of discussing project impacts or mitigation measures can only be made with the specific approval of the CM. Generally, the CM or designee will be the lead with the consultant providing technical input. The consultant will document the discussions, decisions and commitments made with these agencies and forward this information to the CM.

4. **Report requirements.** The type of report, due dates, number of copies, and review periods will be specified in the contract.

5. **Presence at project meetings.** The consultant is expected to attend certain project meetings where biological issues will be discussed to gain firsthand knowledge of project details and to include biological data in project decision-making. These meetings may include project scoping meetings, project development team meetings, interagency coordination and consultation meetings, and field reviews (including serving as tour guides on field reviews). The number of meetings the consultant is obligated to attend will be specified in the contract.

6. **Other deliverables.** Several work products may be required in the consultant contract in addition to the reports described in detail in these guidelines. These other products are briefly described below:

Monthly Progress Report. The consultant submits this report with the monthly invoice for payment. Its purpose is to document that the contract requirements have been met to date and to summarize the contacts made with outside agencies. The contract may specify other items be included in this report, such as problems the consultant has encountered in carrying out the work. Technical information is usually not required in a monthly progress report.

Interim Report. The purpose of this report is to check the progress of the consultant's work to date to determine if any redirection of the consultant is required to meet the contract objectives. Typically, an interim report is prepared by the consultant at the completion of major work phases, such as background research or field studies and presents the information that has been gathered. Interim reports may also be used to determine if the additional, detailed studies specified in the contract are warranted.

Plan of Study. In some situations, a detailed scope of work cannot be developed during initial contract negotiations, and some decisions may be deferred until after the consultant has begun the investigation. For example, it may not be possible to define a field survey strategy until the background research has been completed. Or, the results of initial field surveys may be required to establish the need for, or scope of, more intensive field work (e.g. trapping, wetlands

delineation). In these cases the contract may outline a phased approach, and require the consultant to prepare a more detailed study plan for Caltrans' review and approval. Depending on the terms of the contract, a contract amendment and supplement may be needed to fund the second work phase.

Preliminary Summary of Species of Concern. Caltrans usually relies on the consultant's expertise to develop a plan for addressing endangered, threatened and sensitive species impacts. This plan would be based on preliminary work the consultant performs and is titled the Preliminary Summary of Species of Concern. The consultant also makes recommendations in this report for Caltrans approval for any redirection of the field survey plan contained in the contract.

Draft Mitigation Plan. The consultant may be requested to prepare a report outlining potential mitigation measures that would reduce project-related effects on biological resources. Other items included in this report may be strategies for monitoring and evaluating the success of potential mitigation measures. This report may be prepared prior to discussions with regulatory agencies or may be a summary of the discussions that have taken place between Caltrans and the regulatory agencies. It is Caltrans policy that mitigation measures are only recommendations until they are part of an environmental document as signed by Caltrans management.

Final Mitigation Plan. The consultant may be requested to prepare a detailed plan for carrying out the mitigation that is specified in the Environmental Document. Generally, mitigation plans include environmentally sensitive areas to be set aside, fencing requirements, grading plans and vegetation planting and site maintenance and monitoring schemes. Other items are included as needed.

Responses to Comments. The consultant may be requested to prepare responses to comments received on the Draft Environmental Document.

7. **Involvement after the Environmental Document Phase.** The consultant contract may include duties beyond the submittal of the NES. These duties may include preparation of mitigation plans.

II. TIMING OF REPORTS

The timing of the NES and other documents discussed in these guidelines is keyed to the California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) processes. Figure 1 shows this relationship in detail. Caltrans project development activities are also tied to the environmental process in order to provide the proper level of project detail and ensure coordinated decision-making. Therefore, the timing of the biological studies documents relates to both the level of project information available and the need for biological information in project decision-making. At the initiation of project studies, project alternatives are delineated for study purposes. This first phase culminates in either a draft EIR/EIS or an Initial Study/Environmental Assessment (IS/EA) and is the phase where the major environmental effects of the alternatives are studied. Therefore, the NES, Biological Assessment (BA), and wetlands delineation and evaluations are prepared prior to the circulation date for the draft EIR/EIS or IS/EA. The consultant contract will specify the date when the reports are due.

After circulation of the environmental document, the consultant may be required to undertake more detailed studies of selected alternatives or to prepare draft mitigation plans. This will

often be the case when potentially significant impacts have been identified for the preferred alternative. Under these circumstances the Contract Manager will approve the extent of these studies. All biological reports must be completed prior to the publication of the Final EIR/EIS or Negative Declaration/Finding of No Significant Impact ND/FONSI (except the final mitigation plan which may be prepared later.)

For minor projects, a Categorical Exemption/Exclusion (CE) may be the appropriate level of environmental documentation. In these cases, all biological studies would be completed prior to signature of the CE.

III. MINIMUM QUALIFICATIONS

The qualifications and experience of consultants undertaking biological studies for Caltrans must be related to the biological resources present in the study area. The consultant's staff must, at a minimum possess Bachelor's degrees in a biological science or be able to document two years of experience relevant to the study area or species of concern potentially present at the project site. Generally, the consultant must be able to put together a team composed of a botanist and a wildlife biologist familiar with the resources in that region of the state. Wetland studies need to be performed by personnel trained in and experienced with the methods to be used. Any studies requiring the handling of any endangered or threatened species must be undertaken by biologists who possess the required permits from Federal or State fish and wildlife agencies or who possess specific experience found acceptable to resource agency staff and can obtain the necessary permits in a timely manner.

IV. CONTRACT MANAGER ROLE

The Contract Manager (CM) is the point of contact between the consultant and Caltrans. It is the CM's responsibility to do the following:

- Interpret the contract.
- Approve payment.
- Have draft reports reviewed by technical specialists and return comments to the consultant
- Accept final reports.
- Authorize the consultant to contact others within Caltrans.
- Authorize additional studies within the scope of the contract.
- Arrange, or request consultant to arrange, interagency meetings.
- Guide the consultant in the day-to-day conduct of work specified under the contract.

Typically, the CM will delegate many of the items above to a District biologist as the technical monitor. In the guidance that follows, the term CM has been used to signify the role of both the Contract Manager and the technical monitor.

Only the CM (not the technical monitor) can authorize changes to the contract work scope or budget. Depending on the situation, a contract amendment or supplement may be required before these changes can be approved.

V. INPUT FROM OTHER TECHNICAL STUDIES

During the project development process, the following environmentally related technical studies, in addition to the biological studies discussed in these guidelines, are undertaken when warranted by potential project effects:

- Air Quality
- Noise
- Water Quality
- Hydrology/Hydraulics (including Floodplain Analysis)
- Energy
- Geology
- Socio-economics
- Visual/Aesthetic/Scenic
- Relocation Assistance
- Cultural Resources
- Traffic Forecast/Highway Operations
- Hazardous waste

If the consultant feels that information prepared for these reports may be useful in the assessment of impacts on biological resources, the CM should be contacted so an arrangement can be made for information exchange.

VI. REPORT REVIEW

All reports (other than monthly progress reports) prepared by consultants for Caltrans will be submitted to Caltrans in draft and undergo a review before being accepted by Caltrans. The review will be performed by Caltrans staff, usually staff specialists, and may also be performed by external agencies with special expertise or regulatory responsibility. The review will focus on the following areas:

- Meeting contract commitments.
- Coverage of study area.
- Legal sufficiency for compliance with applicable environmental laws.
- Technical accuracy.

Comments are returned to the consultant who will revise the draft document in response. The consultant or Caltrans may request a meeting to discuss the comments. If comments are extensive, the CM may request a second draft be prepared which would undergo a second round of review. After revisions are made, the consultant will submit the report in final form to

Caltrans. The contract should specify the review and revision periods allowed, and how many copies of the reports are to be submitted.

VII. SCOPING

As part of the project development procedures, Caltrans uses a scoping process to help define environmental issues and public concerns regarding project alternatives under consideration. The consultant may attend project scoping meetings and review written responses to project study initiation notices to gain firsthand knowledge of biological issues that need to be addressed. Other less formal scoping activities include meetings with or phone calls to individual resource agencies, city and county governments, etc. The consultant may make such informal contacts without the prior approval of the CM, unless the CM specifies otherwise. The consultant will keep a record of all contacts made and submit the record to the CM with the monthly Progress Report. Any project-related biological issues which surface during informal scoping will be communicated promptly to the CM. Such issues can have an effect on the course of project studies, particularly when a potentially significant environmental effect is discovered.

VIII. CONSULTATION AND COORDINATION PROCESS

Integral to the study of project impacts is the consultation and coordination with agencies that are responsible for the protection and management of natural resources. The consultant participates in both informal and formal consultations with State and Federal resource agencies for one or more of the purposes outlined below.

- Information gathering.
- Scoping.
- Agreement on study requirements and design.
- Presentation of study results.
- Discussions of project impacts.
- Discussion of mitigation measures and practicable alternatives.
- Informal and formal consultation on endangered species.

Except for item "Information gathering" (See I, Consultant Responsibilities, 3, above), the other consultations will be the responsibility of Caltrans. The CM will request the consultant to prepare specific information to be presented at these consultations, be present at the meetings, and keep meeting records. The consultant may consult with agencies for the purpose of information gathering without prior concurrence from the CM. (Note: the Federal Endangered Species List will be requested by Caltrans, not the consultant.)

IX. COMPLIANCE WITH STATE AND FEDERAL ENVIRONMENTAL LAWS

The Natural Environment Study and related biological reports are prepared to provide information that is needed to comply with a variety of State and Federal laws, regulations and

Executive Orders relating to the natural environment. Following is a brief summary of the principal environmental statutes involved. The consultant should refer to the original statutes or implementing regulations for details regarding the specific requirements of these laws.

Federal Laws

National Environmental Policy Act (42 U.S.C. 4321 et seq.). The National Environmental Policy Act of 1969 (NEPA) established policy and procedures to bring environmental considerations into the planning process for Federal projects. NEPA requires all Federal agencies to identify and assess reasonable alternatives to proposed actions that will restore and enhance the quality of the human environment and avoid or minimize adverse environmental impacts. Implementing regulations by the Council on Environmental Quality (40 CFR Parts 1500-1508) direct Federal agencies to emphasize significant environmental issues in project planning and to integrate impact studies required by other environmental review laws and executive orders into the NEPA process. The NEPA process should therefore be seen as an overall framework for the environmental evaluation of Federal actions.

Federal Endangered Species Act of 1973 (16 U.S.C. 1531-1543). This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Section 7 of the act requires Federal agencies, in consultation with and with the assistance of the Secretary of the Interior, to insure that actions they authorize, fund or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. Regulations governing interagency cooperation under Section 7 are found at 50 CFR Part 402.

Section 404 of the Clean Water Act (33 U.S.C. 1251-1376). Section 404 of the Clean Water Act established a permit program administered by the Army Corps of Engineers (ACOE) regulating the discharge of fill material into waters of the United States (including wetlands). Implementing regulations by the ACOE are found at 33 CFR Parts 320-330. Guidelines for implementation are referred to as the Section 404 (b)(1) Guidelines and were developed by the Environmental Protection Agency (EPA) in conjunction with the ACOE (40 CFR Part 230). The Guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative which would have less adverse impact. An alternatives analysis is required prior to issuance of a permit by the ACOE.

Section 10 of the Rivers and Harbors Act (33 U.S.C. 401 et seq.). Section 10 of the Rivers and Harbors Act is administered by the Army Corps of Engineers. This section requires permits for all structures such as riprap and activities such as dredging in navigable waters of the U. S. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. The ACOE grants or denies permits based on the effects on navigation. Most activities covered under this act are also covered under Section 404 of the Clean Water Act.

Fish and Wildlife Coordination Act (16 U.S.C. 661-666). This act applies to any Federal project where the waters of any stream or other body of water are impounded, diverted, deepened or otherwise modified. Project proponents are required to consult with the U.S. Fish and Wildlife Service and the appropriate State wildlife agency. Reports and recommendations prepared by these agencies document project effects on wildlife and identify measures that may be adopted to prevent loss or damage to wildlife resources. The term "wildlife" includes both animals and

plants. Provisions of the Act are implemented through the NEPA process and Section 404 permit process.

National Wild and Scenic Rivers Act (16 U.S.C. 1271-1287). This act is administered by a variety of State and Federal agencies. Designated river segments flowing through Federally managed lands are administered by the land management agency (e.g., U.S. Forest Service, Bureau of Land Management and the National Park Service). River segments flowing through private lands are administered by the State Resources Agency in conjunction with local government agencies. The Act prohibits Federal agencies from undertaking activities which would adversely affect the values for which the river was designated. On projects that affect designated rivers or their immediate environments, Caltrans consults with the managing agencies during the NEPA process. This early consultation reduces potential conflicts with wild and scenic river values that are protected by the Act.

Executive Order 11990 Protection of Wetlands (May 24, 1977). This order establishes a national policy to avoid adverse impacts on wetlands wherever there is a practicable alternative. The Federal Department of Transportation promulgated DOT Order 5660.1A in 1978 to comply with this direction. On Federally funded projects, impacts on wetlands must be identified in the environmental document. Alternatives that avoid wetlands must be considered. If wetlands impacts cannot be avoided, then all practicable measures to minimize harm must be included. This must be documented in a specific Wetlands Only Practicable Alternative Finding in the Final Environmental Document. An additional requirement is the opportunity for early public involvement in projects affecting wetlands. The Federal Highway Administration provides technical assistance in meeting these criteria (FHWA Technical Advisory 6640.8A) and reviews environmental documents for compliance.

State Laws

California Environmental Quality Act (P.R.C. 21000 et seq.). The California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects that is similar to that promulgated under NEPA. Provisions for joint NEPA/CEQA documents are made in the Guidelines.

California Endangered Species Act (Fish and Game Code 2050 et seq.). The California Endangered Species Act (CESA) establishes that it is the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects which would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. CESA requires State lead agencies to consult with the Department of Fish and Game (DFG) during the CEQA process to avoid jeopardy to threatened or endangered species. As an outcome of consultation, DFG is required to issue a written finding as to whether a project would jeopardize threatened or endangered species and to specify reasonable and prudent alternatives that would avoid jeopardy. CESA provides for joint consultations when both the State and Federal governments list a species.

Native Plant Protection Act (Fish and Game Code 1900-1913). California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the Department of Fish and Game at least 10 days in advance of any change in land use. This allows DFG to salvage listed plant species that would otherwise be destroyed. Caltrans conducts botanical inventories and consults with DFG during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Wild and Scenic Rivers Act (P.R.C. 5093.50 et seq.). This act preserves in their free-flowing state, certain designated rivers that possess extraordinary scenic, recreational, fishery or wildlife values. The Resources Agency is responsible for coordinating activities of State agencies that may affect the rivers in the system.

Sections 1601-1603 of the Fish and Game Code. Under these sections of the Fish and Game Code, Caltrans and other agencies are required to notify the Department of Fish and Game prior to any project which would divert, obstruct or change the natural flow or bed, channel or bank of any river, stream or lake. Preliminary notification and project review generally occur during the environmental process. When an existing fish or wildlife resource may be adversely affected, DFG is required to propose reasonable project changes to protect the resource. These modifications are formalized in a "streamed alteration agreement" which becomes part of the plans, specifications and bid documents for the project.

X. PROCEDURES FOR COMPLETING THE NATURAL ENVIRONMENT STUDY AND RELATED DOCUMENTS

This Section details the steps the consultant should undertake to complete a Natural Environment Study. It is not intended that all steps must be done in sequence; many steps are undertaken simultaneously.

STEP 1. Develop Preliminary Focus for Biological Studies

The consultant must carefully focus the scope and extent of biological studies prior to conducting field investigations. This step is necessary to insure that studies address resources of concern that may be affected by the project while at the same time avoiding encyclopedic discussions of the local or regional biota. Biological resources addressed in the Natural Environment Study will be limited to those that 1) are pertinent to the study area and 2) can reasonably be expected to be affected by the project under study. In most cases, substantive resource issues will have been identified during the project scoping process. The consultant is required to review information developed during this process before initiating biological studies. From a project management standpoint, this step also provides needed information to schedule of field work and allocate survey effort within the study area.

The consultant shall rely on existing information and comments received during the scoping process to develop a list of sensitive species and habitats that may be present within the project area. The most recent records of the California Natural Diversity Data Base (CNDDB) shall be reviewed for the USGS quadrangle on which the project occurs, and for adjacent quadrangles as habitat conditions and regional species distributions dictate. A 10-mile radius from the project site normally provides a useful frame of reference for developing a list of sensitive taxa to be considered during project studies. However, this will not be adequate in all cases. As a rule of

thumb, the consultant shall consider all species whose range includes the project site and whose life requirements may be met by the habitat types that are present within the survey area. The CM will review and approve the list of species developed by the consultant prior to the initiation of field studies.

Published reports such as the most recent edition of the *California Native Plant Society's Inventory of Rare and Endangered Vascular Plants of California* (Skinner & Pavlik, 1994) shall be consulted for information on the distribution and habitat requirements of sensitive plant taxa. Other important sources of general biological information include National Wetlands Inventory Maps compiled by the U. S. Fish and Wildlife Service (FWS), environmental documents for nearby projects, and interviews with individuals who are familiar with the biological resources of the project area. The consultant shall also contact local agency and academic personnel who may be experts on the biota of the study area. These experts may be able to provide additional, unpublished information regarding the distribution and importance of resources within the project area.

For projects requiring the preparation of an EIS, Section 7 of the Endangered Species Act requires that FWS be contacted for a list of threatened and endangered species that may be present in the project area. This list will be requested by Caltrans and transmitted to the consultant by the CM. It will form the basis for the discussion of sensitive species in both the Biological Assessment and the EIS. The consultant shall address all listed, proposed, and candidate taxa as well as the species of concern that appear on the list.

STEP 2. Determine Types and Level of Studies Potentially Required

The consultant must make an initial site visit to inspect all potential alignments and borrow/disposal sites. The habitats that may be affected by the project, either directly or indirectly must be identified and described. Adjacent land uses should be characterized.

After the initial site visit the consultant will refine the list of resources generated under STEP 1 to those that have the potential of occurring within the project area and that have the potential of being impacted by the proposed action. The consultant makes a recommendation on the studies required to assess the impacts by asking the following questions:

1. What habitat types are found in the project area? (See STEP 3)
2. Are animal migration corridors (including streams used by anadromous fish) present in the project area? (See STEP 4)
3. Are there any other biological resources that need to be addressed? (See STEP 5)
4. Is the project area regulated by special jurisdictions? (See STEP 6)
5. Are wetlands present? (See STEP 7)
6. Is there a potential for listed species in the project area? (See STEP 8)

Determining the impact on some resources will require coordination with other agencies or a specialized investigation. Some investigations may also require the services of an expert with necessary permits or experience to handle specific listed species. For projects with minimal impacts on biological resources, the consultant may be able to conclude the field study after the initial site visit.

STEP 3. Map Habitat Types In the Project Impact Area

The consultant shall map the vegetation types within the survey area as early as possible during field investigations in order to provide base maps for subsequent biological work. Mapping shall be at a scale that is large enough to show not only vegetation types, but other important biological features such as habitat for sensitive species, wetlands or unique plant assemblages in relation to project features. In addition, map units must be selected on the basis of a recognized classification system, preferably that used by California Natural Diversity Data Base (CNDDB), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland, 1986). However, other classifications may be used if site conditions make them more appropriate. The CM shall approve the classification system to be used. In all cases, the Natural Environment Study shall reference the source for the system that is used.

A combination of aerial photo interpretation and ground truthing will normally be used to delineate preliminary vegetation units. Boundaries and descriptions of the map units are then refined as necessary during subsequent field visits. Descriptive information for each mapping unit shall include the distribution of the unit within the study area, an estimate of the total acreage present, the dominant plant species, and the relative sensitivity of the vegetation. All plant and animal taxa encountered during site visits shall be listed by vegetation type in an appendix to the NES. Each species observed must be identified to the extent necessary to determine whether it is listed or proposed species. Natural communities whose status is being tracked by CNDDB shall also be identified at this stage.

STEP 4. Migrational Corridor Studies

The consultant will determine the extent and pattern of animal movements in the project area and assess how the proposed project will affect that movement. This includes movement for seasonal migration and daily movement for food, water, cover, etc.

The obvious animal species will include the herbivores such as deer and bighorn sheep. Also important may be smaller species that use riparian corridors for their migration cover (warblers, vireos, flycatchers, etc.). Other less obvious migrational elements may include roosting and feeding sites for raptors and shorebirds, routes between breeding waters and upland habitat used by salamanders, toads and aquatic snakes, and so forth.

STEP 5. Biological Factors that Need to Be Addressed (No Specific Law to Address Resource)

The objective is to have sufficient information to assess potential impacts to biological resources for each of the project alternatives under study. It would be impossible to name all factors that need to be addressed on any given project. However, each case will be unique and the consultant will need to tailor studies to fit the given situation. There may be a fisheries resource, ocean resource, unique tree stand, mineral spring, etc. that could require special studies to assess the project impacts.

The consultant will recommend the appropriate level of study commensurate with the uniqueness/value of the resource and the potential for impact. Studies may require no more than documenting the fact that the resource is there or interviewing experts familiar with the resource. The CM shall approve the consultant's recommendations as to appropriate level of effort prior to study commencement.

STEP 6. Areas under Special Jurisdiction

The consultant will need to determine if the project will impact an area protected by special jurisdiction (Wild and Scenic Rivers, Wildlife Refugees, Coastal Zone, Bay Conservation and Development Commission, etc.). The consultant will need to work closely with the CM in order to determine what the consultant's responsibilities are in regard to areas under special jurisdiction. If an agreement, permit, consistency determination, etc. is required, the consultant will probably not be responsible for obtaining it, but may need to develop specific information or prepare a specialized report or document for use by Caltrans.

STEP 7. Perform Wetland Studies

The purpose of a wetland study is to evaluate a project's impact on wetlands by evaluating not only the total area of the impact but also taking into account the functions, values, and quality of the wetland.

For most projects, the discussion of wetland issues will be included entirely within the Natural Environment Study (NES). In cases where the discussion of wetland issues is lengthy and/or project impacts are potentially significant, a separate wetlands assessment report will be prepared, summarized within the NES and then attached to the NES as a technical appendix. The consultant should include in the assessment a review of available reference materials. Many of the reference resources, which should be consulted, are referenced in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). A sample format for the Wetland Assessment is included as Appendix E.

In accordance with Federal Executive Order 11990, federally funded projects that cannot avoid wetlands require preparation of a "Wetlands Only Practicable Alternative Finding". Guidelines for compliance with this executive order are contained within FHWA guidance documents DOT Order 5660.1A, T6640.8A and FHPM 777. (Appendices J, K, and I). Caltrans will generally prepare the finding with assistance from the consultant. Projects that are categorically excluded from NEPA do not require a "Wetlands Only Practicable Alternative Finding".

After an initial consideration of (1) functions, values and quality of the wetland, (2) potential regulatory issues, (3) potential controversy over project impacts, (4) the magnitude of project impacts, and (5) the degree of confidence which the study team has in their assessment, the team will need to determine if additional wetland studies are appropriate. Projects with minor impacts will usually not require further studies. If impacts could be substantial and/or controversial, further studies may be warranted to determine how the project will affect the wetland, determine potential impact significance, and guide the development of appropriate mitigation.

If the need for additional studies is apparent, the consultant will prepare a study plan for approval by the CM.

Additional studies may target specific wetland functions or be comprehensive in scope. Examples of targeted studies could include a Habitat Evaluation Procedure (HEP) for assessment of wildlife habitat values, hydrologic studies (e.g., groundwater monitoring, in-stream flow measurements, water quality sampling), recreation surveys, etc. Where technical expertise for evaluation of the different functional values is not available, the *Wetland Evaluation Technique* (Adamus et al., 1987) is recommended. Any type of evaluation must

document the rationale used in reaching a particular conclusion. Detailed technical studies may be restricted by the CM to a limited number of project alternatives.

Step 7A. Wetland and Waters of the United States Identification and Delineation The Army Corps of Engineers (ACOE) and Environmental Protection Agency (EPA) jointly define wetlands as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas". The term "Waters of the U.S." applies to the jurisdictional limits of the authority of the Corps of Engineers under the Clean Water Act. The term is defined in 33 CFR Parts 320 through 330, Regulatory Programs of the Corps of Engineers; Final Rule (Federal Register Vol. 51 No. 219, November 13, 1986). Wetlands are a type of waters of the U.S. under Corps jurisdiction. The consultant is responsible for identifying waters and wetlands in the wetlands study.

The above definition is to be used by the consultant when determining whether a particular habitat is a wetland for the purposes of Executive Order 11990, Section 404 of the Clean Water Act, NEPA, and CEQA.

Procedures for making this determination are described in Technical Report Y-87-1 *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987). The NES or Wetland Assessment must identify and delineate wetlands regulated under Section 404 of the Clean Water Act. Data forms supporting the delineation must be included. Methods described in the above manual are to be used in identifying and delineating all wetlands which could be affected by the proposed project.

Outside the San Francisco Bay Area (Caltrans, District 4), wetland delineation on agricultural parcels may require coordination with the Natural Resource Conservation Service (Environmental Protection Agency et al, 1994).

Step 7B. Assessment of Wetland Functions, Values and Project Impacts

When wetlands are present, it will be necessary to determine which functions are performed by the wetland, the value of those functions and to determine how the project will affect the continued performance of the identified functions.

To perform this assessment, the consultant will need a study team. This team will be composed of one or more individuals familiar with the ecology of wetlands in the project region and capable of making the initial determination that wetlands are present. The team will typically include an ecologist but may also include specialists in the areas of hydrology, botany, and soil science.

Functions are the physical, chemical and biological attributes of a wetland without regard to their importance to society. There are many different functions that a particular wetland may perform. These include:

- Groundwater Recharge
- Groundwater Discharge
- Flood Flow Alteration
- Sediment Stabilization

- Sediment/Toxicant Retention
- Nutrient Removal/Transformation
- Production Export
- Wildlife Habitat (aquatic and terrestrial)
- Uniqueness/Heritage
- Recreation

Values are those wetland functions that generally are regarded as beneficial to society. Examples include recreation, aesthetics, groundwater recharge, etc. Some functions may not be valued by all or part of society. For example, nutrient removal and transformation may not be considered as a value if that function leads to algal blooms and noxious odors. At this point it may be necessary to expand the study team by adding special expertise in the areas of wildlife biology and recreation. The level of detail necessary for evaluating the wetland and project impacts will depend upon a number of considerations that must be evaluated on a project specific basis. These considerations include:

- Is the wetland in a pristine condition? If not, to what extent has the wetland system been altered?
- Is the wetland man-made and/or maintained?
- Is the wetland of an unusual type in this locality?
- Are sensitive species likely to be present?
- How large is this wetland?
- How much of the wetland will be affected (both directly and indirectly)?
- What is the status of wetland habitats in the project region? (e.g. What portion of the overall wetland resource does the subject wetland constitute? Are other wetlands in the project region threatened?)
- Are there other values pertaining to this wetland, the loss of which could be controversial?
- Are there other persons or organizations that value this wetland? Examples of interested parties, and their particular interests include:

Army Corps of Engineers-placement of fill material

Environmental Protection Agency-placement of fill material, water quality, endangered species

U.S. Fish and Wildlife Service/National Marine Fisheries Service-wildlife habitat, endangered species, migratory wildlife (particularly waterfowl and salmonids)

California Department of Fish and Game-wildlife species and their habitats, endangered species

Regional Water Quality Control Board-wetlands that function to improve water quality, especially in areas such as the Lake Tahoe basin

California Coastal Commission-wetlands within the coastal zone

San Francisco Bay Conservation and Development Commission-wetlands in the San Francisco Bay

Private individuals and organizations- endangered species, wildlife and their habitats, aesthetics, recreational uses of wetlands

STEP 8. Biological Assessment (Endangered Species)

Both the FWS and DFG require similar information on which to base their opinion concerning a projects potential to jeopardize a species. Caltrans has adopted the FWS term, Biological Assessment, for that information. The FWS (FWS as used in this document includes the National Marine Fisheries Service, as appropriate) defines Biological Assessment as "…the information prepared by or under the direction of the Federal agency concerning listed and proposed species and designated and proposed critical habitat that may be present in the action area and the evaluation of the potential effects of the action on such species and habitat". For complete details of complying with Section 7 of the Federal Endangered Species Act, see 50 CFR Part 402-Interagency Cooperation Endangered Species Act of 1973, as Amended. Details for complying with Section 2090 of the California Endangered Species Act are found in *Guidelines for Consulting With the Department of Fish and Game on Projects Subject to CEQA That May Affect Endangered and Threatened Species* (Cummings & Nicola, 1986) and any supplement or revision to this publication issued by DFG.

The consultant must develop background information for Federal and State species of concern that have a potential of being affected by the proposed project. This will include literature review as well as interviewing recognized experts on each species. Biological Assessments must include the required information and follow the basic theme of the suggested format in Appendix D.

The project must be field surveyed for species presence during the appropriate time of year. Published reports of species occurrence may be used under special circumstances. If present and species is:

1. Federally listed endangered or threatened, see STEP 8A (Federal informal/formal consultation)
2. State listed endangered, threatened, or rare, see STEP 8B (State consultation)
3. Federally proposed endangered or threatened, see STEP 8C (Federal conference)
4. Federal candidate endangered or threatened species, or a species of concern, see STEP 8D (Federal technical assistance)
5. State candidate endangered or threatened species, see STEP 8E (State informal consultation)

If the list obtained from FWS contains Federally listed or proposed species, the consultant must prepare a Biological Assessment. When it is found that the project will not affect a species so listed, the Assessment will be submitted to the CM, who will request the FHWA to seek from the FWS concurrence in that finding, see STEP 8F (Federal concurrence in findings)

NOTE: WHEN A SPECIES IS A CONCERN TO DFG AND FWS, CALTRANS WILL CONSULT WITH BOTH AGENCIES SIMULTANEOUSLY, INCLUDING HAVING BOTH AGENCIES PRESENT AT THE SAME MEETINGS.

STEP 8A. Federal Informal/Formal Consultation If field surveys confirm the presence of a listed species, the CM will initiate informal consultation with the appropriate endangered species office of FWS and the transportation engineer from FHWA to explore a means of avoiding the impact or developing a means of mitigation that guarantees that the species or its habitat will not be jeopardized by the project. When all parties reach complete agreement, the consultant completes the Biological Assessment for transmittal to FWS by FHWA with the request for Formal Consultation. During the informal/formal consultation process, additional studies of project impacts on listed species may be necessary. The consultant will undertake such studies when authorized by the CM.

STEP 8B. State Consultation. When the presence of a State-listed species is determined, the consultant will notify the CM to initiate informal dialogue with the appropriate environmental services supervisor from DFG to explore a means of avoiding the impact or developing a means of mitigation that guarantees that the species or its habitat will not be jeopardized by the project. When both parties reach complete agreement, the consultant completes the Biological Assessment for transmittal to DFG by Caltrans with a request for a determination of non-jeopardy.

STEP 8C. Federal Conference If the consultant determines the presence of a Federally proposed species, the CM will begin an informal dialogue with the appropriate endangered species office of FWS and the transportation engineer from FHWA to explore means of avoiding the impact or developing a means of mitigation that guarantees the species or its habitat will not be jeopardized by the project. When all parties reach complete agreement, the consultant completes the Biological Assessment. Caltrans will ask FHWA to request a Formal Conference with the FWS.

STEP 8D. Federal Technical Assistance If a candidate species or a species of concern is present, the consultant will begin an informal dialogue with the appropriate endangered species office of FWS and the CM to determine if a means of lessening the impact to the species is possible. The amount known about these species varies and their rarity may be the result of a lack of knowledge. It is important to obtain FWS input to avoid performing unnecessary studies that will duplicate information they already possess. It may be necessary to determine the species requirements and survey other potential sites to determine if the rarity is actually the result of a lack of previous surveys. FWS may already have enough information on some species to determine what the potential project impacts are without further off-site surveys.

STEP 8E. State Informal Consultation Species accepted by the Fish and Game Commission for review become a State candidate, which provides a measure of protection to the species. The consultant must begin an informal dialogue with the appropriate environmental services supervisor from DFG and the CM to determine if a means of lessening the impact to the species is possible. When agreement is reached concerning project impacts and mitigation, the consultant completes a Biological Assessment for transmittal to DFG by Caltrans to obtain a non-jeopardy letter from DFG.

STEP 8F. Federal Concurrence in Findings When a list is obtained from FWS that includes listed or proposed species and none of them will be affected by the project, the consultant completes the Biological Assessment. The CM will forward to FWS through FHWA a request for

concurrence in that finding. If there are other listed or proposed species that will be affected, this step will be handled during the Consultation/Conference.

Under most conditions, the Biological Assessment would be completed prior to the circulation of the draft environmental document. However, with some projects where multiple alternatives with wide-ranging impacts are being studied at the draft environmental document stage, the CM may not authorize the consultant to complete the Biological Assessment until after the alternatives have been narrowed (following the circulation of the draft environmental document). In these cases, the assessment of impacts for each alternative and borrow/disposal site must be in sufficient detail for an adequate comparison of alternatives. Mitigation should at least be to the conceptual stage before the draft environmental document is circulated. Sometimes it is preferable to develop detailed mitigation after alternative selection is completed. Consultation/Conference/Technical Assistance must be complete before the final environmental document is approved. Mitigation measures must be described in the final environmental document.

STEP 9. Determine Project Impacts

The ultimate goal of the impact assessment is to provide the biological information necessary to allow a significance determination to be made in the Draft Environmental Document. Assessing project impacts on biological resources is probably the most difficult task to be accomplished during the preparation of the NES. Early in project planning, project details may be insufficient to allow an accurate assessment of all impacts. However, during the early phases of project development, information developed for the NES can often be used to develop design alternatives that will avoid or lessen biological impacts. Effective coordination with resource agencies during this phase can result in more responsive project designs and fewer conflicts during environmental document review and subsequent permitting phases. To facilitate this early resolution of conflicts, the consultant shall notify the Contract Manager as soon as possible following the discovery of sensitive resources within the study area.

The discussion of biological impacts in the NES must be as specific as possible, describing the type of impact, its local and regional context, and its magnitude or severity. If sensitive species have been identified within the survey area, the NES shall contain the following information:

- Maps showing the occurrences of all sensitive species that have been identified within the survey area in relation to project features.
- The size(s) of the population(s) either in terms of numbers of individuals or habitat area occupied.
- The portion of the population(s) to be directly affected by each project alternative (expressed as a percentage of the total population in the survey area).
- The portion of the population(s) to be indirectly affected by each alternative (again expressed as a percentage of the total population in the survey area).
- The amount of suitable habitat to be directly or indirectly affected under each alternative (if this differs from the area actually occupied by the species).
- The nature and magnitude of the habitat alteration anticipated under each alternative (e.g., will changes in habitat values caused by the project affect the long-term survival of the population(s)? Are the anticipated effects adverse or beneficial?).

- The importance of project impacts within the context of the known distribution of the species (i.e. how many other populations are known to exist? What percentage of the total species numbers will be affected by the current project?).
- An evaluation of cumulative impacts that may be expected to result from projects that are approved.

When assessing project effects on important natural communities, a similar approach should be used. In this instance the consultant shall map the boundaries of the community type within the survey area and evaluate the condition of the resource. Project effects must then be described in as much detail as possible, stating the type of impact (e.g. habitat removal, fragmentation, introduction of exotic species) and its magnitude. These effects must be evaluated in the appropriate local or regional context. In most cases a regional context will be appropriate. However, in some instances it may be more reasonable to evaluate the resource in a local context. For example, a community type might be well represented in the region, but extremely scarce locally. The loss of this habitat may have serious consequences for local wildlife populations.

Finally, the discussion of biological impacts must reflect coordination with those agencies having jurisdiction or permit authority over the resources in question. The NES will need to document agency concerns and any mitigation measures that have been agreed to and may be required during the permitting phase.

STEP 10. Prepare Natural Environment Study Report

The Natural Environment Study Report brings all the biological information together into a single document. (A sample format for the Natural Environment Study is in Appendix C.)

The "Summary of Findings and Conclusions" section of the Natural Environment Study must include the results of the supporting technical reports as well as a summary of the general biological studies. This section of the Natural Environment Study should provide the author of the environmental document with sufficient information to complete the biological impact sections of that document. This insures that the environmental document reflects the conclusions of the consultant with the emphasis on the appropriate resources.

STEP 11. Transmittal to Project Development Team

The transmittal letter for the NES should contain the consultant's recommendations to Caltrans. The consultant makes recommendations on project mitigation and the significance of project impacts. Only if mitigation measures have been agreed to and accepted by the resource agencies and Caltrans management, will they be in the NES/BA as proposed mitigation. If they are still recommendations of the consultant and not agreed to, they will be included in the transmittal letter. The determination of significance will also be in the NES if Caltrans management has agreed to the determination; however, if that agreement has not been reached, the consultant's recommendation will be in the transmittal letter.

SUGGESTED REPORT TRANSMITTAL CONTENT

To: , Contract Manager Address

Attached for your review and approval is the Natural Environment Study Report (NES) for Project _____. This report has been prepared as partial fulfillment of Contract Number _____ entered into between Caltrans and (consultant) on (date).

The Biological Assessment, Wetland Assessment, etc. (as appropriate) has been incorporated into the NES.

Determination of the significance of the impacts has been discussed with the Project Development Team and agreement was reached that on the basis of (mitigation), (project modifications), (etc.) impacts to (resource) will be (insignificant) (reduced, however still significant). See NES for full details.

Mitigation measures have been worked out with management and the resource agencies and are described in the NES.

For further details, clarification, or any questions concerning this document please contact me at (phone and address).

(signed) Consultant

The letter should also include any other pertinent information that Caltrans should be aware of concerning this report. Any loose ends that will need to be cleared up must be pointed out in this letter.

STEP 12. Respond to Comments on Draft Environmental Document

During the circulation of the Draft Environmental Document (DED), comments are received from the public, State and Federal agencies, local jurisdictions and special interest groups. A public hearing may be held during the circulation period. The consultant will be assigned the responsibility to prepare formal responses to comments and questions relating to the biological studies performed.

STEP 13. Undertake Additional Studies

Comments received during the circulation of the DED may substantially alter the course of project studies. Alternatives may be deleted, additional alternatives may arise, the preferred alternative may change, the need for additional studies may be brought to light, design variations may be suggested, etc. Any of these changes may cause the need for additional biological studies. The consultant will be required to undertake these studies if sufficient funds had been budgeted in the contract, or if a contract supplement is processed.

DEFINITIONS

Transportation Engineer — The Federal Highway Administration principal person of contact for project development and construction matters.

Contract Manager — The person within Caltrans who is responsible for evaluating and monitoring the work of the consultant.

Technical Monitor — The person within Caltrans who provides day-to-day guidance to the consultant. The technical monitor may or may not be the same person as the Contract Manager.

Mitigation — The lessening of project impacts by avoidance, minimizing impacts, rectifying the impact, reducing or eliminating the impact over time, or compensating for the impact.

Project — Any Caltrans action that has potential effects on the environment.

Project Development Team — An interdisciplinary team composed of individuals from the various Caltrans units that have major responsibility for the development of the project (i.e. Right-of-Way, Environmental, Construction, Project Development.) The PDT acts as a steering group in directing the course of studies and in making recommendations to top District management.

Scope of Work — The list of specific technical studies to be performed by the consultant.

Species of Concern — 1) Those plant and animal taxa that are either listed, proposed for listing, or candidates for listing as endangered or threatened, or those taxa considered species of concern by the U.S. Fish and Wildlife Service;

2) those plant and animal taxa that are either listed, proposed for listing, or candidates for listing as endangered, threatened, or rare by the California Department of Fish and Game;

3) those plant taxa appearing in the most recent edition of the Inventory of *Rare and Endangered Vascular Plants of California* published by the California Native Plant Society;

4) those animal taxa appearing on The California Department of Fish and Game's various lists of "Species of Special Concern in California"; and

5) on Federal lands, plant and animal taxa given protection by the land-managing agency.

Vegetation Type — An assemblage of plants that is relatively homogeneous in its physiognomy, floristic composition, and environmental requirements. As used in these guidelines, synonymous with plant community. Caltrans has accepted the community classification system used by the California Natural Diversity Data Base (Holland 1986). More detailed community classifications may be appropriate under special circumstances.

Wetland — Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. (ACOE and EPA definition).

ACRONYMS

COE	U.S. Army Corps of Engineers
BA	Biological Assessment
CM	Contract Manager
CESA	California Endangered Species Act
CE	Categorical Exemption/Categorical Exclusion
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	The California Natural Diversity Data Base
DED	Draft Environmental Document
DFG	California Department of Fish and Game
DOT	Department of Transportation
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FWS	U.S. Fish and Wildlife Service
FHPM	Federal Highway Planning Manual
FHWA	Federal Highway Administration
HEP	U.S. Fish and Wildlife Service's Habitat Evaluation Procedures
IS/EA	Initial Study/Environmental Assessment
ND/FONSI	Negative Declaration/Finding of No Significant Impact
NEPA	National Environmental Policy Act
NES	Natural Environment Study
NPPA	Native Plant Protection Act (California)
PRC	Public Resources Code
USC	United States Code
USGS	United States Geological Survey

NATURAL ENVIRONMENT STUDY REPORT FORMAT

Two Natural Environment Study Report formats are available. Both are available on the Standard Environmental Reference (SER) web pages. The formats contain the basic format and guidance for report preparation.

The SER web pages may be found at the following location:
http://www.dot.ca.gov/ser/index.htm

The Natural Environment Study Report (NES) may be found at:
http://www.dot.ca.gov/ser/vol1/sec3/natural/Ch14Bio/files/nes.doc

The Natural Environment Study Report (Minimal Impact) (NES (MI)) short report format may be found at: http://www.dot.ca.gov/ser/vol1/sec3/natural/Ch14Bio/files/nesmi.doc

These new formats replace older formats.

BIOLOGICAL ASSESSMENT REPORT FORMAT

Two formats replace the former Biological Assessment Report format. Both are available on the Standard Environmental Reference (SER) web pages. The formats contain the basic format and guidance for report preparation.

First is the new Biological Assessment Report form that may be found at:
http://www.dot.ca.gov/ser/vol1/sec3/natural/Ch14Bio/files/ba.doc

Second is the Biological Evaluation Report format that may be found at:
http://www.dot.ca.gov/ser/vol1/sec3/natural/Ch14Bio/files/be.doc

Mitigation is not to be included in this report unless Caltrans management and FWS/DFG have previously agreed to specific compensation measures. In most cases mitigation will be worked out during informal consultation, in which case mitigation discussions should be a part of the assessment. If the Contract Manager wants your report before mitigation has been worked out, include your recommendations for mitigation in your cover memo.

WETLAND DELINEATION & ASSESSMENT REPORT FORMAT

A wetland assessment may have one or more goals that could include identification and delineation of wetland habitats, a qualitative evaluation of the resource values present or a quantitative estimate of the ability of the wetland to perform a particular function.

The following format is intended to document a multi-faceted wetland investigation. Inappropriate elements may be deleted for studies that have a narrower set of goals. Any particular element may be expanded to fit the needs of a complex study.

I. Summary

II. Introduction

- A. Description of Project
- B. Purpose of Assessment

III. Environmental Setting

IV. Methods

V. Results

- A. Wetland Delineation
- B. Wetland Functions and Values

VI. Discussion

- A. Project Impacts
- B. Regulatory Requirements

VII. Conclusions

VIII. References Cited

IX. Personal Communications Cited

X. Appendices

- A. Project map showing proposed Corps jurisdictional areas
- B. Data Forms-Wetland Delineation
- C. Data Forms-Wetland Functions and Values

SUGGESTED FORMAT FOR DRAFT MITIGATION PLANS

Draft Mitigation Plans are working documents intended to develop potential measures that will avoid, reduce or offset adverse biological effects associated with transportation projects. Properly prepared plans should inform project design personnel of available mitigation options, their feasibility, effectiveness, and cost. These documents should reflect coordination with appropriate regulatory agencies since they are frequently used as the basis of mitigation discussions with these agencies. The following format should be used in the preparation of Draft Mitigation Plans.

I. INTRODUCTION... This section should give a brief description of the project alternatives being considered in the Environmental Document, including the preferred alternative if one has been specified. Biological resources affected by the various alternatives should also be summarized in this section.

II. MITIGATION GOALS... The goals and objectives to be achieved by mitigation actions should be stated as clearly as possible here. Whenever possible, mitigation objectives should be expressed in terms of measurable parameters. This will facilitate project monitoring and subsequent evaluation of the effectiveness of project mitigation.

III. MITIGATION SPECIFICATIONS... This section should describe actions proposed to achieve the mitigation goals outlined on Section II. While precise specifications are not needed at this stage, actions should be outlined in sufficient detail to make preliminary determinations of the feasibility, effectiveness and costs of the various measures under study. The discussion should address responsibility for site management and maintenance.

IV. MONITORING METHODS... Monitoring is an integral part of environmental mitigation; monitoring needs should be carefully considered during the design and selection of mitigation measures. This section should outline monitoring techniques that will 1) provide interim information on the progress of the mitigation, 2) identify problems requiring remedial action, 3) supply the information necessary to evaluate the overall success of the mitigation measures as implemented, and 4) describe contingency plans, schedule and resource needs..

V. REFERENCES… List literature and personal communications cited in the text.

VI. APPENDIX… Include technical sampling protocols or sample data sheets. Technical studies associated with the project may be included here.

REFERENCES

Adamus, P. R., E. J. Clairain, R. D. Smith, and R. E. Young. 1987. *Wetland Evaluation Technique (WET); Volume II: -Methodology. Operational Draft Technical Report Y-87-_,* U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Cummings, E. W. and S. J. Nicola, 1986. *Guidelines for Consulting With the Department of Fish and Game on Projects Subject to CEQA That May Affect Endangered and Threatened Species*. Environmental Services Branch Administrative Report 86-1. 34 pp..

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, US Army Engineer Waterway Experiment Station, Vicksburg, Mass.

Environmental Protection Agency, Department of Agriculture, Department of Defense, and Department of Interior, 1994. Interagency memorandum of agreement concerning wetlands determinations for purposes of Section 404 of the Clean Water Act and Subtitle B of the Food Security Act. January 6, 1994.

Holland, R. F. 1986. *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game Unpublished Report. 156 pp.

Skinner, M. W. and B. M. Pavlik (eds.). 1994. California Native Plant Society's *Inventory of Rare and Endangered Vascular Plants of California*. California Native Plant Society Special Publication No. 1 (5th edition). 338 pp.

PLANT SURVEY GUIDANCE

The following guidelines for botanical surveys and impact assessments have been adopted by the California Department of Fish and Game. These guidelines are used by Caltrans to prepare scopes of work for project studies and to review consultant prepared reports. Consultants preparing botanical inventories and impact assessments for Caltrans projects are strongly encouraged to follow this guidance.

State of California

THE RESOURCES AGENCY

Department of Fish and Game

May 4, 1984

Guidelines For Assessing Effects Of Proposed Developments On Rare And Endangered Plants and Plant Communities

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how field surveys should be conducted, and what information should be contained in the survey report.

1. Botanical surveys that are conducted to determine the environmental effects of a proposed development should be directed to all rare and endangered plants and plant communities. Rare and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare and/or endangered under the following definitions.

   A species, subspecies or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition or disease. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may become endangered if its environment worsens.

   Rare plant communities are those communities that are of highly limited distribution. These communities may or may not contain rare or endangered species. The most current version of the California Natural Diversity Data Base's Outline of Terrestrial Communities of California may be used as a guide to the names of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or the extent that, rare plants will be affected by a proposed project when:

   a. Based on an initial biological assessment, it appears that the project may damage potential rare plant habitat;

   b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking; or

c. No initial biological assessment has been conducted and it is unknown whether or not rare plants or their habitat exists on the site.

3. Botanical consultants should be selected on the basis of possession of the following qualifications (in order of importance):

   a. Experience as a botanical field investigator with experience in field sampling design and field methods;

   b. Taxonomic experience and a knowledge of plant ecology;

   c. Familiarity with the plants of the area, including rare species; and

   d. Familiarity with the appropriate State and Federal statutes related to rare plants and plant collecting.

4. Field searches should be conducted in a manner that will locate any rare or endangered species that may be present. Specifically, rare plant surveys should be:

   a. Conducted at the proper time of year when rare or endangered species are both "evident" and identifiable. Field surveys should be scheduled to coincide with known flowering periods, and/or during periods of phenological development that are necessary to identify the plant species of concern.

   b. Floristic in nature. "Predictive surveys" (which predict the occurrence of rare species based on the occurrence of habitat or other physical features rather than actual field inspection) should be reserved for ecological studies, not for impact assessment. Every species noted in the field should be identified to the extent necessary to determine whether it is rare or endangered.

   c. Conducted in a manner that is consistent with conservation ethics. Collections of rare or suspected rare species (voucher specimens) should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable State and Federal permit regulations. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection.

   d. Conducted using systematic field techniques in all habitats of the site to ensure a reasonably thorough coverage of potential impact areas.

   e. Well documented. When a rare or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form should be completed and submitted to the Natural Diversity Data Base.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations, EIR's and EIS's and should contain the following information:

a. Project description, including a detailed map of the project location and study area.

b. A written description of biological setting referencing the community nomenclature used, and a vegetation map.

c. Detailed description of survey methodology.

d. Dates of field surveys.

e. Results of survey (including detailed maps).

f. An assessment of potential impacts.

g. Discussion of the importance of rare plant populations with consideration of nearby populations and total species distribution.

h. Recommended mitigation measures to reduce or avoid impacts and monitoring program to measure the success of the mitigation.

i. List of all species identified.

j. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.

k. Name of field investigator(s)

l. References cited, persons contacted, herbaria visited, and disposition of voucher specimens.

Department of Transportation **ORDER**

Office of the Secretary DOT 5660.1A

Washington, D.C. 8-24-78

SUBJECT: PRESERVATION OF THE NATION'S WETLANDS

I. PURPOSE. This order sets forth the Department of Transportation (DOT) policy that transportation facilities and projects should be planned, constructed, and operated to assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable, and establishes procedures for implementation of the policy.

II. CANCELLATION. DOT 5660.1, Preservation of the Nation's Wetlands, of 5-21-75.

III. BACKGROUND AND AUTHORITY. This order is issued pursuant to the following executive order and statutes:

A. Executive Order 11990, dated May 24, 1977, "Protection of Wetlands", establishes a national policy "to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative." The order further provides that each agency shall provide leadership to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities, (2) providing federally undertaken, financed, or assisted construction and improvements, and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

B. Sections 2(b) and 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 1651 et seq.) provide that it is "national policy that special effort should be made to preserve the natural beauty of the countryside and the park and recreation lands, wildlife and waterfowl refuges, and historic sites."

C. The National Environmental Policy Act of 1969 (NEPA) as amended (42 U.S.C. 4321 et seq.) establishes a national policy to "... promote efforts which will prevent or eliminate danger to the environment and biosphere and stimulate the health and welfare of man...." NEPA requires preparation of an environmental impact statement (EIS) for any major federal action significantly affecting the quality of the human environment. Order DOT 5610.1B, "Procedures for Considering Environmental Impacts" of September 30, 1974, requires that information on impacts on fresh water and coastal wetlands be included in the EISs prepared pursuant to NEPA.

D. Section 2 of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) provides for consultation with the U.S. Fish and Wildlife Services and the state wildlife resources agency when "... waters of any stream or other body of water are proposed to be controlled or modified..."

E. The Water Bank Act (16 U.S.C. 1301) expresses the Congressional finding that "... it is in the public interest to preserve, restore, and improve the wetlands of the nation...."

F. The Coastal Zone Management Act (16 U.S.C. 145) establishes a policy to "preserve, protect, and develop natural resources of the coastal zone and where possible to restore them "

G. The Federal Water Pollution Control Act Amendments 1972 (33 U.S.C. 1151) establish a policy to "restore and maintain the chemical, physical, and biological integrity of the nation's waters."

IV. DEFINITION.

A. "Wetlands" are defined as lowlands covered with shallow and sometimes temporary or intermittent waters. This includes, but is not limited to swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, and tidal overflows, as well as estuarine areas, and shallow lakes and ponds with emergent vegetation. Areas covered with water for such a short time that there is no effect on moist-soil vegetation are not included in the definition, nor are the permanent waters of streams, reservoirs, and deep lakes. The wetlands ecosystem includes those areas which affect or are affected by the wetland area itself; e.g., adjacent uplands or regions up and down stream. An activity may affect the wetlands indirectly by impacting regions up or down stream from the wetland or by disturbing the water table of the area in which the wetland lies. Attachment 1 references the wetlands classification system.

B. "New construction" for purposes of this order shall include any draining, dredging, channelizing, filling, diking, impounding, and related activities, and any structures or facilities, begun or obligated after the effective date of this order. This does not include routine repairs and maintenance of existing facilities.

V. POLICY. It is the policy of DOT to assure the protection, preservation, and enhancement of the nation's wetlands to the fullest extent practicable during the planning, construction, and operation of transportation facilities and projects. In accordance with E.O. 11990, new construction located in wetlands shall be avoided unless there is no practicable alternative to the construction and the proposed action includes all practicable measures to minimize harm to wetlands which may result from such construction. In making a finding of no practicable alternative, economic, environmental and other factors may be taken into account. Some additional cost alone will not necessarily render alternatives or minimization measures impractical since additional cost would normally be recognized as necessary and justified to meet national wetland policy objectives.

VI. RESPONSIBILITIES.

A. The Assistant Secretary for Policy and International Affairs (P-1) shall oversee the implementation of the policy set forth in this order, shall recommend any modifications of procedures that may be appropriate, and shall consult with the Department of the Interior, the Council on Environmental Quality, and other

agencies as appropriate concerning the Department's implementation of these policies.

B. Heads of operating administrations shall distribute this order or promulgate appropriate guidance consistent with this order and the Executive Order and shall be responsible for the full implementation of the policies within their respective administrations.

C. The Assistant Secretary (P-1) and the heads of operating administrations jointly shall be responsible for preparation and/or dissemination of appropriate guidance, informational materials, training programs, and other materials necessary to comply with the Executive Order's requirement that agencies provide leadership in the field of wetland protection. Such leadership should be particularly aimed at informing and guiding the actions of state and local transportation officials operating with the assistance of or subject to permits from DOT.

VII. PROCEDURES. The following procedures should be integrated into existing environmental and public participation processes to the maximum extent feasible. The policy of this order applies to any project located in or having an impact on wetlands.

A. New authorizations or appropriations transmitted to the Office of Management and Budget will indicate, if a specific action to be proposed will be located in wetlands, whether the proposed action is in accord with E.O. 11990.

B. The impacts of new construction projects on wetlands should be identified and discussed in any submissions made to state and metropolitan Clearinghouses under Office of Management-and Budget Circular A-95. Submissions to A-95 will not be required solely to address wetland issues. Appropriate opportunity for early review of proposals for new construction in wetlands should be provided to the public and to agencies with special interest in wetlands. This may include early public involvement approaches.

C. Any project which will have a significant impact on wetlands will require preparation of an EIS. Prior to the preparation of an EIS, agencies with jurisdiction and expertise concerning wetland impacts (U.S. Fish and Wildlife Service, state wildlife or natural resources agencies, and the Corps of Engineers, as appropriate) should be consulted for advice and assistance concerning the proposed undertaking.

D. An EIS (or negative declaration) on a proposal for new construction in wetlands should reflect the results of early coordination and should identify specific impacts of the project on the wetlands taking into consideration the matters listed in paragraph 6(f).

E. When federally-owned wetlands or portions of wetlands are proposed for lease, easement, right-of-way, or disposal to nonfederal public or private parties, the agency with jurisdiction over the lands should either (1) reference in the conveyance those uses that are restricted under this policy and other relevant federal, state, or local wetlands regulations; or (2) attach other appropriate restrictions to the use of properties by the grantee or purchaser and any

successor, except where prohibited by law; or (3) withhold such properties from disposal.

F. In carrying out any activities (including small scale projects which do not require documentation) with a potential effect on wetlands, operating agencies should consider the following factors in implementing the Department policy relevant to a proposal's effect on the survival and quality of wetland:

1. Public health, safety and welfare, including water supply, water quality, recharge and discharge, and pollution; flood and storm hazards, and sedimentation and erosion.

2. Maintenance of natural systems, including conservation and long-term activity of existing flora and fauna, species and habitat diversity and stability, hydrologic utility, fish and wildlife, timber, and food and fiber resources; and other uses of wetlands in the public interest, including recreational scientific, and cultural uses as well as transportation uses and objectives.

G. Alternatives which would avoid new construction in wetlands must be studied, giving consideration to environmental and economic factors. If use of wetlands is proposed, the alternatives analysis for major actions should have demonstrated that there is no practicable alternative to the use of the wetlands and that all practicable measures to minimize harm to the wetlands have been included.

H. For any major action which entails new construction located in wetlands, a specific finding should be made by the affected operating administration that (1) there is no practicable alternative to construction in the wetland, and (2) that all practicable measures to minimize harm have been included. The proposed finding should ordinarily be included in the final EIS or negative declaration for the proposal.

VIII. APPLICABILITY.

A. All programs and projects proposed for direct construction, assistance, or permit by the DOT shall be reviewed for consistency with the policy of this order.

B. This order does not apply to projects presently under construction or to projects for which all funds have been obligated through fiscal year 1977, to projects and programs for which a draft or final EIS was filed prior to October 1, 1977.

C. Nothing in this order shall apply to assistance provided for emergency work essential to save lives and protect property or public health and safety, performed pursuant to sections 305 and 306 of the Disaster Relief Act of 1974 or pursuant to other emergency operations.

Further information concerning the type, number, and location of wetland areas may be obtained from Circular No. 39 of the Department of the Interior, Fish and Wildlife Service, or from the wetlands inventories maintained by the various states. The classification system presently contained in Circular No. 39 is being revised to provide uniformity in concepts and terminology throughout the United States. A notice of intent to adopt the classification system was published in the December 12, 1977, Federal Register. Copies of the new classification system may be obtained from the Fish and Wildlife Service, Suite 217, Dade Building, 9620 Executive Center Drive, Ft. Petersburg, Florida 33702.

The Fish and Wildlife Service is also developing a National Wetlands Inventory Maps which will be complete in 1981. They will display typical wetland information on U.S. Geological Survey base maps for all of the states and U.S. territories and possessions. Maps are currently available of coastal Texas and Louisiana. On new projects, Fish and Wildlife Service should be contacted to determine whether maps have been developed for proposed project areas.

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

SUBJECT	FHWA TECHNICAL ADVISORY
GUIDANCE FOR PREPARING AND PROCESSING ENVIRONMENTAL AND SECTION 4(F) DOCUMENTS	T 6640.8A October 30, 1987

1. PURPOSE. To provide guidance to Federal Highway Administration (FHWA) field offices and to project applicants on the preparation and processing of environmental and Section 4(f) documents.

2. CANCELLATION. Technical Advisory T 6640.8, "Guidance Material for the Preparation of Environmental Documents," dated February 24, 1982, is canceled effective on November 27, 1987.

3. APPLICABILITY

   a. This material is not regulatory. It has been developed to provide guidance for uniformity and consistency in the format, content and processing of the various environmental studies and documents pursuant to the National Environmental Policy Act (NEPA), 23 U.S.C. 109(h) and 23 U.S.C. 138 (Section 4(f) of the DOT Act) and the reporting requirements of 23 U.S.C. 128.

   b. The guidance is limited to the format, content and processing of NEPA and Section 4(f) studies and documents. It should be used in combination with a knowledge and understanding of the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 CFR 1500-1508), FHWA's Environmental Impact and Related Procedures (23 CFR 771) and other environmental statutes and orders (see Appendix A).

   c. This guidance should not be used until November 27, 1987, the effective date of the 1987 revisions to 23 CFR 771.

Ali F. Sevin

Director, Office of Environmental Policy

Attachment

FHWA TECHNICAL ADVISORY T 6640.8A
OCTOBER 30, 1987
ATTACHMENT

GUIDANCE FOR PREPARING AND PROCESSING ENVIRONMENTAL

AND SECTION 4(F) DOCUMENTS

Background

An earlier edition of this advisory (dated February 24, 1982) placed major emphasis on environmental Impact statements (EISs) and provided limited guidance on environmental assessments (EAs) and other environmental studies needed for a categorical exclusion (CE) determination or a finding of no significant impact (FONSI). The revised guidance gives expanded coverage to CE determinations, EAs, FONSIs, EISs, supplemental EISs, reevaluations, and Section 4(f) evaluations. This material is not regulatory. It does, however, provide for uniformity and consistency in the documentation of CEs and the development of environmental and Section 4(f) documents.

The FHWA subscribes to the philosophy that the goal of the NEPA process is better decisions and not more documentation. Environmental documents should be concise, clear, and to the point and should be supported by evidence that the necessary analyses have been made. They should focus on the important impacts and issues with the less important areas only briefly discussed. The length of EAs should normally be less than 15 pages and EISs should normally be less than 150 pages for most proposed actions and not more than 300 pages for the most complex proposals. The use of technical reports for various subject areas would help reduce the size of the documents.

The FHWA considers the early coordination process to be a valuable tool in determining the scope of issues to be addressed and in identifying and focusing on the proposed action's important issues. This process normally entails the exchange of information with appropriate Federal, State and local agencies and the public from inception of the proposed action to preparation of the environmental document or to completion of environmental studies for applicable CEs. Formal scoping meetings may also be held where such meetings would assist in the preparation of the environmental document. The role of other agencies and other environmental review and consultation requirements should be established during scoping. The Council on Environmental Quality (CEQ has issued several guidance publications on NEPA and its regulations as follows: (1) "Questions and Answers about the NEPA Regulations," March 30, 1981; (2) "Scoping Guidance," Apri1 30, 1981; and (3) "Guidance Regarding NEPA Regulations," July 28, 1983. This nonregulatory guidance is used by FHWA in preparing and processing environmental documents. Copies of the CEQ guidance are available in the FHWA Office of Environmental Policy (HEV-11).

Note, highway agency (HA) is used throughout this document to refer to a State and local highway agency responsible for conducting environmental studies and preparing environmental documents and to FHWAs Office of Direct Federal Programs when that office acts in a similar capacity.

12. Wetland Impacts

When an alternative will impact wetlands the draft EIS should (1) identify the type, quality and function of wetlands involved, (2) describe the impacts to the wetlands, (3) evaluate alternatives which would avoid these wetlands, and (4) identify practicable measures to minimize harm to the wetlands. Wetlands should be identified by using the definition of 33 CFR 328.3(b) (issued on November 13, 1986) which requires the presence of hydrophytic vegetation, hydric soils and wetland hydrology. Exhibits showing wetlands in the project impact area in relation to the alternatives, should be provided.

In evaluating the impact of the proposed project on wetlands, the following two items should be addressed: (1) the importance of the impacted wetland(s) and (2) the severity of this impact. Merely listing the number of acres taken by the various alternatives of a highway proposal does not provide sufficient information upon which to determine the degree of impact on the wetland ecosystem. The wetlands analysis should be sufficiently detailed to provide an understanding of these two elements.

In evaluating the importance of the wetlands, the analysis should consider such factors as: (1) the primary functions of the wetlands (e.g., flood control, wildlife habitat, ground water recharge. etc.), (2) the relative importance of these functions to the total wetland resource of the area, and (3) other factors such as uniqueness that may contribute to the wetlands importance.

In determining the wetland impact, the analysis should show the project's effects on the stability and quality of the wetland(s). This analysis should consider the short- and long-term effects on the wetlands and the importance of any loss such as: (1) flood control capacity, (2) shore line anchorage potential, (3) water pollution abatement capacity. and (4) fish and wildlife habitat value. The methodology developed by FHWA and described in reports numbered FHWA-IP-82-23 and FHWA IP-82-24, "A Method for Wetland Functional Assessment Volumes I and II," is recommended for use in conducting this analysis. Knowing the importance of the wetlands involved and the degree of impact, the HA and FHWA will be in a better position to determine the mitigation efforts necessary to minimize harm to these wetlands. Mitigation measures which should be considered include preservation and improvements of existing wetlands and creation of new wetlands (consistent with 23 CFR 777).

If the preferred alternative is located in wetlands, to the fullest extent possible, the final EIS needs to contain the finding required by Executive Order 11990 that there are no practicable alternatives to construction in wetlands. Where the finding is included, approval of the final EIS will document compliance with the Executive Order 11990 requirements (23 CFR 771.125(a)(1)). The finding should be included in a separate subsection entitled "Only Practicable Alternative Finding" and should be supported by the following information:

(a) a reference to Executive Order 11990;

(b) an explanation why there are no practicable alternatives to the proposed action;

(c) an explanation why the proposed action includes all practicable measures to minimize harm to wetlands: and

(d) a concluding statement that: “Based upon the above considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.”

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
FEDERAL-AID HIGHWAY PROGRAM MANUAL

VOLUME	7	RIGHT-OF-WAY AND ENVIRONMENT
CHAPTER	7	ENVIRONMENT
SECTION	7	MITIGATION OF ENVIRONMENTAL IMPACTS TO PRIVATELY OWNED WETLANDS

Transmittal 378
May 25, 1984
HEV - 1

Par. 1. Purpose
2. Authority
3. Background
4. Federal Participation Policy
5. Evaluation of Impacts
6. Mitigation of Impacts
7. Other Considerations

1. PURPOSE. * *To provide policy and procedures for the evaluation and mitigation of adverse environmental impacts to privately owned wetlands caused by new construction of Federal-aid highway projects.*

2. AUTHORITY. *42 U.S.C. 4321 et seq.; 23 U.S.C. 109(h), 138, 315; E.O. 11990; DOT Order 5660.1A; 49 CFR 1.48 (b).*

3. BACKGROUND. *Executive Order 11990, Protection of; Wetlands, and DOT Order 5660.1A, Preservation of the Nation's Wetlands, emphasize the important functions and values inherent in the Nation's wetlands. Federal agencies are required to avoid new construction in wetlands unless the head of the agency determines that: (1) there is no practicable alternative to such construction, and (2) the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.*

* Italicized material is published in 23 CFR 777.

4. FEDERAL PARTICIPATION POLICY

a. Those measures which the Federal Highway Administration (FHWA) and a State highway agency (SHA) find to be appropriate and necessary to mitigate significant, adverse environmental impacts to privately owned wetlands are eligible for federal participation where the impacts actually result from an FHWA action. The justification for the cost of proposed mitigation measures should be considered in the same context as any other public expenditure; that is, the proposed mitigation represents a reasonable public expenditure when weighed against other social, economic, and environmental values, and the benefit realized is commensurate with the proposed expenditure. Mitigation measures shall give like consideration to traffic needs, safety, durability, and economy of maintenance of the highway.

b. It is FHWA policy to permit, consistent with the limits set forth in this directive, the expenditure of Federal-aid highway funds for the acquisition of land or interests therein for the purpose of mitigating environmental damages when privately owned wetlands are directly affected by a Federal-aid highway project.

5. EVALUATION OF IMPACTS

a. The extent of Federal-aid participation in measures to mitigate adverse highway impacts to privately owned wetlands should be directly related to:

(1) the importance of the impacted wetlands, and

(2) the significance of the highway impact on the wetlands.

b. Evaluation of the importance of the impacted wetlands should consider:

(1) the primary functions of the wetlands (e.g., flood control, wildlife habitat, erosion control, etc.),

(2) the relative importance of these functions to the total wetland resource of the area, and

(3) other factors such as uniqueness, esthetics, etc.

c. A determination of the significance of the highway impact should focus on how the project affects the stability and quality of the wetlands. This evaluation should consider the short- and long-term effects on the wetlands and the significance of any loss such as:

(1) flood control capacity,

(2) erosion control potential,

(3) water pollution abatement capacity, and

(4) wildlife habitat value.

6. MITIGATION OF IMPACTS. *There are a number of actions that can be taken to minimize the impact of highway projects on privately owned wetlands. In order to qualify for Federal-aid highway funding, actions to minimize impacts should be considered in the order listed.*

a. First consideration must be given to the mitigation of wetland impacts within the highway right-of-way limits. This should include the enhancement of existing wetlands and the creation of new wetlands in the highway median, borrow pit areas, interchange areas, and along the roadside.

b. There may, in some specific cases, be compelling reasons and sufficient justification to institute mitigation measures other than those set forth in paragraph 6a of this directive. In these instances, the SHA may propose and the Regional Federal Highway Administrator may approve the following mitigation measures for implementation outside the highway right-of-way on a case-by-case basis. Such measures should be designed to reestablish, to the extent reasonable, a condition similar to that which would have existed if the project were not built.

(1) The use of Federal-aid funds to improve existing publicly owned wetlands. Improvements to existing wetlands can take such forms as water-level control and planting of wetland vegetation.

(2) The use of Federal-aid funds to purchase replacement wetlands. The first effort should be to create new wetlands or to restore wetlands. If this is not possible, then consideration should be given to the acquisition of interests in existing privately owned wetlands. In any case, the public interest in replacement must be sufficient to ensure that the area is maintained as a wetland.

7. OTHER CONSIDERATIONS

a. The development of measures proposed to mitigate wetlands impacts should include consultation with appropriate State and Federal agencies.

b. The definition of wetlands on a project will be in accordance with the definition issued by the U.S. Army Corps of Engineers (33 CFR 323.2(c)).

c. The acquisition of proprietary interests in replacement wetlands as a mitigation measure may be in fee simple or by easement, as appropriate.

d. An SHA may acquire privately owned lands in cooperation with another public agency. Such an arrangement may accomplish greater benefits than would otherwise be accomplished by the individual agency acting alone.

e. An SHA may either transfer the title of lands acquired outside the right-of-way, without credit to Federal funds, to an appropriate public agency (e.g., U.S. Fish and Wildlife Service or State natural resource agency) or enter into an agreement with such to manage such lands. When such transfer occurs, there shall be an explicit agreement that the lands or interests therein transferred shall remain in

the grantee agency's ownership or control so long as the lands continue to serve the purpose of the original acquisition. In the event the area transferred no longer serves the purpose of the original acquisition, the lands or interests therein transferred shall revert to the SHA for proper disposition.

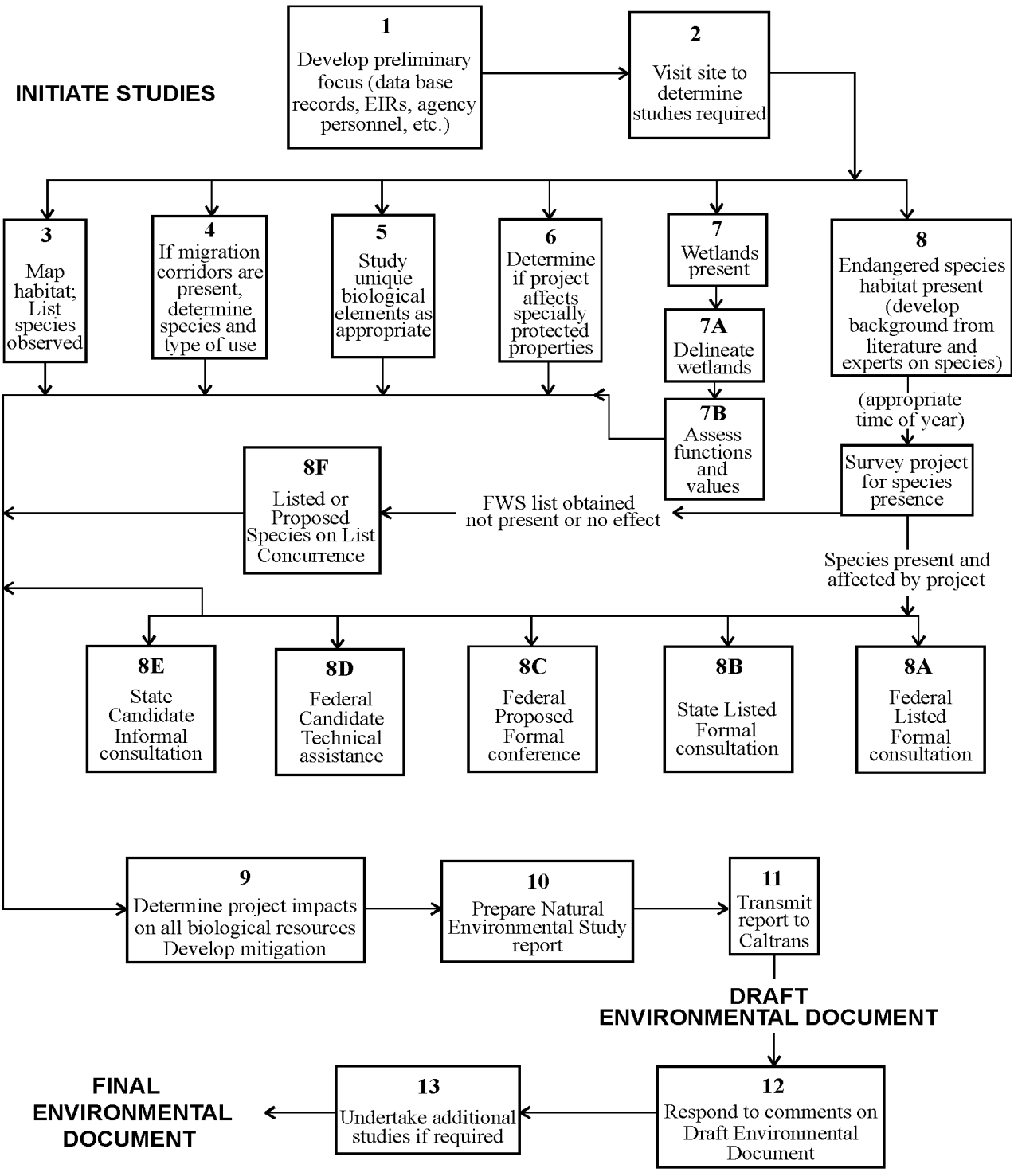
f. *Participation in the cost of acquiring lands or interests therein will be limited to those costs necessary to acquire lands sufficient to provide not more than one acre of replacement lands for each acre of privately owned wetlands that is directly affected by a Federal-aid highway project. In determining the acreage of replacement land required, the acreage of wetlands maintained, restored, or created on the highway right-of-way (paragraph 6a) will be deducted and the amount of Federal participation in the improvement of publicly owned wetlands (paragraph 6b) will be considered.*

g. *Federal-aid funds are not eligible for use to maintain or manage wetlands areas. Therefore, construction, improvement or acquisition of wetlands should not be considered unless arrangements can be made to assure the maintenance and viability of the wetlands resource.*

h. *The acquisition of replacement wetlands as a mitigation measure is not mandatory and is applicable only where permitted by (or consistent with) State law.*

i. *The policy set forth in this directive does not extend to the acquisition of interests in lands outside of the highway right-of-way for the purpose of mitigating impacts caused by the taking of privately owned lands (not wetlands) that have value as wildlife habitat which may be affected by a Federal-aid highway project.*

FIGURE 1 - FLOWCHART OF NATURAL ENVIRONMENTAL STUDY



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